

ELECTRONIC PHASE SHIFTER WITH ENHANCED  
PHASE SHIFT PERFORMANCE

ABSTRACT OF THE DISCLOSURE

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A varactor based phase shifter that increases phase shift range using a lower characteristic impedance between quadrature ports than is used at its input/output ports. The circuit makes use of a four port coupler arrangement that imbeds a quarter wave impedance transformation between the input port and the quadrature ports as well as between the quadrature ports and the output port. The characteristic impedance across the quadrature ports is therefore less than the characteristic impedance across the input and output ports. In one implementation, reducing a characteristic input/output impedance of 50 to a 20 ohm quadrature port impedance results in a phase shift range increase of more than 50%.

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